DOCUMENT RESUME

ED 284 041 CE 047 866

AUTHOR Stamps, Charles A.
TITLE Statewide Comparative Costs Study between Occupational and Academic Education, Grades 9-12, in Nevada, 1987.
INSTITUTION Nevada State Dept. of Education, Carson City.
PUB DATE Feb 87
NOTE 47p.; Some figures contain small, broken type.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academic Education; Comparative Analysis; *Cost Estimates; Educational Finance; *Expenditure per Student; Financial Support; Measurement Techniques; *Program Costs; *Statewide Planning; *Vocational Education
IDENTIFIERS *Nevada

ABSTRACT

A study compared the per-student costs of occupational and academic education in Nevada. Data were obtained from superintendents and occupational education directors from 16 Nevada school districts, the Nevada Girls' Training Center, and Nevada Youth Training Center. It was determined that it cost 52 percent more to provide educational services to the occupational student than to the academic student. The student-teacher ratio was 12:1 for occupational education versus 17:1 for academic education. The per-student average teacher's salary was $2,197.23 for occupational education compared with $1,590.86 for academic education. The statewide average amount expended on consumable student supplies was $200.49 for each occupational student versus $70.16 for each academic student. Occupational education equipment costs $145.88 per student per year compared with $32.45 per academic education student. Maintenance and repair costs averaged $87.89 per occupational student versus $43.00 per academic education student. Because of the higher costs associated with providing occupational education services, it was recommended that a differential funding formula be adopted and that the distributive school fund be increased so as to meet these differential costs in a consistent and equitable manner. Appendixes include data comparing various program costs and suggested procedures for use in determining occupational and academic education unduplicated enrollments for a cost comparison study. (MN)

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# STATEWIDE COMPARATIVE COSTS STUDY BETWEEN OCCUPATIONAL AND ACADEMIC EDUCATION, GRADES 9-12 IN NEVADA, 1987

BY

Charles A. STAMPS, PhD

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# STATEWIDE COMPARATIVE COSTS STUDY BETWEEN OCCUPATIONAL AND ACADEMIC EDUCATION, GRADES 9-12 IN NEVADA, 1987

by

Charles A. Stamps, PhD

Coordinator, Occupational Research Unit

CE 047866

February, 1987

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## Major Findings

- When calculating the costs of teacher's salary, consumable supplies, equipment, and maintenance and repair, it costs Nevada fifty-two percent more per student to provide these educational services to the occupational student than it does to the academic student.
- Occupational education has a 12:1 student/teacher ratio compared to 17:1 for academic education.
- Nevada school districts' teachers' salaries average $2,197.23 per student for occupational education compared to $1,590.86 for academic education.
- As a statewide average Nevada spends $200.49 yearly on consumable supplies for each occupational education student while it spends $70.16 for each academic student.
- Occupational education equipment costs $145.88 per student on the average, yearly, compared to $32.45 per academic education student.
- Yearly, the statewide average expenditure, per student, on maintenance and repair for occupational education is $87.89 compared to $43.00 for academic education.

## Abstract

A primary purpose of this study was to compare per-student costs between occupational and academic education on a statewide basis in Nevada. Using selected variables, data were collected using mailed survey instruments. Costs were calculated and the data analyzed revealed that it does cost the state of Nevada more to provide educational services to the occupational student when compared to the cost of providing these same services to the academic educational student. A differential funding formula is provided to illustrate the per-student costs using the existing Nevada Distributive School Fund. Recommendations include increasing the Distributive School Fund for the purposes of meeting these differential costs in a consistent and equitable manner. Follow up impact studies to verify the effectiveness of the recommended formula are also suggested.

Acknowledgements

The Nevada Department of Education appreciates the time and effort that the school district administrators devoted to researching comparative costs and their supplying these data within a very short timeline.

Special thanks to Ward Gubler, Director, Secondary Education-Vocational High Schools and Occupational Education Program, Clark County School District, for his development of Definitions to be Used When Completing the Occupational Education/General Education Cost-Comparison survey, and to Dr. Marshall Darnell, Director of Special Instructional Projects, Clark County School District, for his providing the Department with an in-depth, detailed cost analysis for each category under study by the individual school and districtwide.

The Department also gives special recognition to Bert Elliott, Assistant Superintendent, Elko County School District, for his assisting the Coordinator of the Occupational Research Unit in the development of the survey instrument.

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## Introduction

Occupational educators, school administrators, and other public school personnel who are involved in school budgets have theorized that there are added costs to providing educational services to the occupational education student as compared to that of the academic student, grades 9-12. To test that theory, the Planning, Research, and Evaluation Branch of the Nevada Department of Education examined the comparative costs from the sixteen Nevada school districts (Esmeralda has no secondary school), Nevada Girls' Training Center, and Nevada Youth Training Center.

A study done in 1984 by Reardon, Added Cost Reimbursement for Vocational Education Programs in Comprehensive High Schools and Area Vocational Centers in Nevada - A Feasibility Study, identified selected variables which contribute to these differential costs. Additionally, information collected from the Western Regional States, Oregon, Washington, New York, Georgia, and West Virginia in December, 1986, by the Occupational Research Unit of the Nevada Department of Education indicated agreement with the use of the variables previously identified in the Reardon study.

In order to draw accurate conclusions based upon information about Nevada schools, this study gathered cost comparisons between occupational education and academic education, grades 9-12. The variables which were used have been found to be appropriate based upon previous work and regional comparisons. These consisted of the following:

a. student/teacher ratio

b. teacher's salary per student

c. consumable supplies

d. equipment

e. facilities

f. maintenance and repair

Each of these costs was calculated on a cost-per student basis.

## Methodology

In January 1987, superintendents and occupational education directors from sixteen Nevada school districts, Nevada Girls' Training Center, and Nevada Youth Training Center were requested to supply the following information:

a. total unduplicated enrollments in occupational and academic education

b. total number of teachers in occupational and academic education

c. total salaries for occupational and academic instructional staff; and

d. the yearly costs for supplies, equipment, maintenance and repair, facilities, and miscellaneous expenses for grades 9-12.

Figure 1 illustrates a copy of the cover letter and Figures 2 and 2a illustrate a copy of the survey instrument which were mailed to all school district occupational education directors, superintendents or principals with a request that they be used when reporting the comparative costs. Clark County School District developed the Definitions To Be Used When Completing the Occupational

Education/General Education Cost-Comparison Survey for gathering the Cost/Comparative Study data (Appendix A). The Occupational Research Unit developed the formula for determining unduplicated enrollment count. This is identified in Appendix B.

EUGENE T. PASLOV
Superintendent of
Public Instruction

STATE OF NEVADA

Capitol Complex
Carson City, Nevada 89710

DEPARTMENT OF EDUCATION

January 8, 1987

The State Department of Education will seek legislative financial support for the added costs for providing educational services for the occupational education student during the 1987 session. Among the factors that contribute to these added costs are student/teacher ratio, teacher salary per student, consumable supplies, maintenance and repair, equipment and facilities.

The Department wishes to provide the legislature with cost comparisons of educating the general or academic student with the costs for educating the occupational education students, grades 9-12, for each of Nevada's secondary school districts. Would you, therefore, complete the attached questionnaire and submit it to Dr. Charles Stamps, Coordinator, Occupational Research Unit, State Department of Education, no later than February 1, 1987, so that I can prepare a statewide cost summary of these comparative costs for presentation to the legislature?

Please attempt to answer all questions on the questionnaire to provide information on all high schools as well as district wide information. The more evidence that we can provide the legislature on comparative costs, the stronger our case becomes in requesting funding.

If your school district has additional costs that are not identified on the questionnaire such as extended contracts, separate facilities, transportation to and from the school to the worksites and separate telephone lines for the cooperative occupational education teacher, please list these costs.

If you have any difficulty in providing the requested data, please call me at 885-3104.

Sincerely,

Marcia R. Reardon
Deputy Superintendent

/sb
attachments

pc: Dr. Kevin Crowe
Dr. Charles Stamps

*An Equal Opportunity Agency*

Cover Letter Mailed With Survey Instrument
Figure 1.

_____ County School District
(Name)
Cost Comparisons Between Occupational Education and
General Education, Grades 9-12
January 1987

---

DEFINITIONS

PLEASE USE DATA FROM 1986-87 SCHOOL YEAR

Full-time teachers--
only full-time teachers are reported on the survey. Full-time teachers are defined as those teachers of five or more class periods per day.

Teacher's Program Identification (Occupational Education or General Education Program)--
is determined by his/her teaching assignment. Teaching three or more class periods in occupational education generates an occupational education assignment; teaching three or more class periods in general education generates a general education assignment.

Occupational education students--
are students enrolled in Part A (job specific) classes and/or Part B classes (occupational general or exploratory) classes.

General education students--
are students enrolled in classes other than Part A (job specific) occupational education and/or Part B (occupational general or exploratory) classes.

Student enrollment--
the student enrollment (total students) should be calculated to reflect enrollment in one-hour periods of time. i.e. 15 students enrolled in a two-hour block (like auto shop) should be reported as 30 students since this converts to two one-hour classes.

PLEASE COMPLETE THE FOLLOWING

_____ HIGH SCHOOL
(Name)

| Occupational Educational Program | | General Education Program | |
|---|---|---|---|
| Total Occ Ed Students = | _____ | Total Gen Ed Students = | _____ |
| Total Occ Ed Teachers = | _____ | Total Gen Ed Teachers = | _____ |
| Total Salaries = for all Occ Tchrs = | $_____ | Total Salaries = for all Gen Tchrs = | $_____ |
| Consumable Supplies = | $_____ | Consumable Supplies = | $_____ |
| Equipment = | $_____ | Equipment = | $_____ |
| Maint/Repair = | $_____ | Maint/Repair = | $_____ |
| Facilities = | $_____ | Facilities = | $_____ |
| (Other) | | (Other) | |
| _____ = | $_____ | _____ = | $_____ |
| _____ = | $_____ | _____ = | $_____ |
| TOTAL COSTS | $_____ | TOTAL COSTS | $_____ |

Survey Instrument
Figure 2.

_____ HIGH SCHOOL
(Name)

| Occupational Education Program | | General Education Program | |
|---|---|---|---|
| Total Occ Ed Students = | _____ | Total Gen Ed Students = | _____ |
| Total Occ Ed Teachers = | _____ | Total Gen Ed Teachers = | _____ |
| Total Salaries = for all Occ Tchrs = | $_____ | Total Salaries = for all Gen Tchrs = | $_____ |
| Consumable Supplies = | $_____ | Consumable Supplies = | $_____ |
| Equipment = | $_____ | Equipment = | $_____ |
| Maint/Repair = | $_____ | Maint/Repair = | $_____ |
| Facilities = | $_____ | Facilities = | $_____ |
| (Other) | | (Other) | |
| _____ = | $_____ | _____ = | $_____ |
| _____ = | $_____ | _____ = | $_____ |
| TOTAL COSTS | $_____ | TOTAL COSTS | $_____ |

DISTRICT WIDE

| Occupational Education Program | | General Education Program | |
|---|---|---|---|
| Total Occ Ed Students = | _____ | Total Gen Ed Students = | _____ |
| Total Occ Ed Teachers = | _____ | Total Gen Ed Teachers = | _____ |
| Total Salaries = for all Occ Tchrs = | $_____ | Total Salaries = for all Gen Tchrs = | $_____ |
| Consumable Supplies = | $_____ | Consumable Supplies = | $_____ |
| Equipment = | $_____ | Equipment = | $_____ |
| Maint/Repair = | $_____ | Maint/Repair = | $_____ |
| Facilities = | $_____ | Facilities = | $_____ |
| (Other) | | (Other) | |
| _____ = | $_____ | _____ = | $_____ |
| _____ = | $_____ | _____ = | $_____ |
| TOTAL COSTS | $_____ | TOTAL COSTS | $_____ |

Survey Instrument (continued)
Figure 2a

Costs were calculated on the 1985-86 or the 1986-87 school year, depending upon which year the district felt most accurately reflected normal costs. Monies provided by SB 121 in 1985-86 for occupational education equipment were excluded from equipment costs. Costs for providing teachers with extended contracts for summer employment or extra responsibilities were calculated as part of the teachers' salaries for both the occupational education teacher and the academic teacher. Data were checked for accuracy as they were received from the school districts. When appropriate, district personnel were contacted for additional verification.

After calculating the student/teacher ratio and the average teacher's salary, the Occupational Research Unit used the above information to determine per-student costs on the following variables:

a. teacher's salary
b. consumable supplies
c. equipment
d. maintenance and repair
e. facilities
f. miscellaneous expenses

## Results

Statewide averages portray that there is a smaller student/teacher ratio in occupational education than there is in academic education. Cost-per-student expenditures on teachers' salaries, consumable supplies, equipment, and maintenance and repairs for occupational education exceed those of the academic student. The average statewide per-student-cost

for occupational education is $2,631.49 while the average statewide per-student-cost for academic education is $1,736.47 for these four expenses. Based on the data in this study, there is a rounded percentage difference of fifty-two (51.54). This means that it costs fifty-two percent more to provide these services to the individual occupational education student than it does to provide these services to the individual academic student, grades 9-12.

Costs of facilities and miscellaneous expenses were not calculated in the cost-per-student analyses since there were major differences among the school districts on what constituted a cost when reporting expenditures for facilities and miscellaneous expenses. Facility expenses were reported as "not able to separate costs of occupational from academic," costs based on square footage in existing buildings times per square foot and replacement costs amortized over twenty years, modifications or rehabilitation, new construction projects, removal of asbestos, and construction of new facilities. Miscellaneous expenses were reported as including costs for textbooks, "miscellaneous," audio visual materials, transportation, extended contracts, modems, telephones, power and lights, "inventory," administrative support costs, clerical support, Public Employment Retirement System (PERS), and State Industrial Insurance System (SIIS). Because of the lack of consistency in reporting these data, the Department decided to exclude the costs for facilities and miscellaneous expenses from the study.

Lincoln County School District included comparison costs at the Nevada Girls' Training Center in its district-wide report. The data supplied

by the Nevada Youth Training Center included only enrollments, faculty, and faculty salaries; and the principal said that he could not separate out other costs. As a result, the Nevada Youth Training Center data were excluded from this study.

## Analyzation of Data

Student/Teacher Ratio. The statewide unweighted average student/teacher ratio by class period for occupational education was twelve to one (12:1) while it was seventeen to one (17:1) for academic education. Table 1 shows that the statewide occupational education teaching load as a percent of the academic statewide teaching load was seventy-four (74). Thus, on the average, statewide, occupational education teachers teach twenty-six (26) percent fewer students, hourly, than do academic teachers.

Teachers' salaries. As a statewide average, yearly, it costs Nevada school districts $2,197.23 to provide the individual student occupational education instruction while it costs $1,590.86 to provide the individual student academic education, grades 9-12. As shown in Figure 3, there is a $606.37 difference between the average salary cost of the occupational education teacher and that of the academic teacher; or it costs thirty-eight (38) percent more in salary to provide the individual student instruction in occupational education than it costs for academic education, grades 9-12.

Table I

Comparative Costs Survey Returns From Nevada School Districts, Grades 9-12, February, 1987

| | Average Student/Teacher Ratio by Class Period | | |
|---|---|---|---|
| School | Occupational | Academic | Occupational Teaching Load As Percent of Academic Teaching Load |
| Carson City | 8:1 | 19:1 | 42 |
| Churchill | 16:1 | 23:1 | 69 |
| Clark | 19:1 | 24:1 | 79 |
| Douglas | 18:1 | 21:1 | 85 |
| Elko | 6:1 | 12:1 | 50 |
| Eureka | 6:1 | 12:1 | 50 |
| Humboldt | 12:1 | 16:1 | 75 |
| Lander | 9:1 | 16:1 | 56 |
| Lincoln* | 10:1 | 14:1 | 71 |
| Lyon | 14:1 | 14:1 | 100 |
| Mineral | 11:1 | 15:1 | 73 |
| Nye | 9:1 | 18:1 | 50 |
| Pershing | 12:1 | 14:1 | 85 |
| Storey | 12:1 | 9:1 | 133 |
| Washoe | 19:1 | 23:1 | 82 |
| White Pine | 16:1 | 19:1 | 84 |
| AVERAGE STD/TCH RATIOS BY CLASS PERIODS | 12:1 | 17:1 | 74 |

All averages are unweighted averages

*Lincoln School District Data include Nevada Girls' Training Center

Consumable Supplies. Figure 4 indicates that, yearly, Nevada spends, as a statewide average, $200.49 on consumable supplies for each occupational education student while it spends $70.16 for each academic education student, grades 9-12. This $130.33 difference represents a one hundred eighty-six (186) percent added cost for the occupational education student over the academic student.

Equipment. The Nevada statewide yearly average expenditure, per student, on occupational education equipment is $145.88 as compared to $32.45 for equipment for the academic student, grades 9-12. This $113.43 difference, as portrayed in Figure 4 represents a three hundred fifty percent added cost for the occupational education student over the academic student.

Maintenance and Repairs. Yearly, the statewide average expenditure, per student, on maintenance and repair for occupational education is $87.89 compared to $43.00 for academic education. Figure 4 shows that this $44.89 difference represents a one hundred four percent added cost for the occupational education student over the academic student.

## Analyses of Expenditures Aggregated at the School District Level

For the purposes of this report cost differentials were aggregated at the per-student level. Supportive district-wide information which may be of assistance to the reader is illustrated in Appendices C-I. These include data on Nevada's sixteen school districts:

a. Comparative Enrollments (Grades 9-12) in Occupational Education and Academic Education;

b. Comparative Number of Occupational Education Teachers and Academic Education Teachers (Grades 9-12);

Figure 3.

Statewide Costs Per Student
Average Teacher Salaries
1987

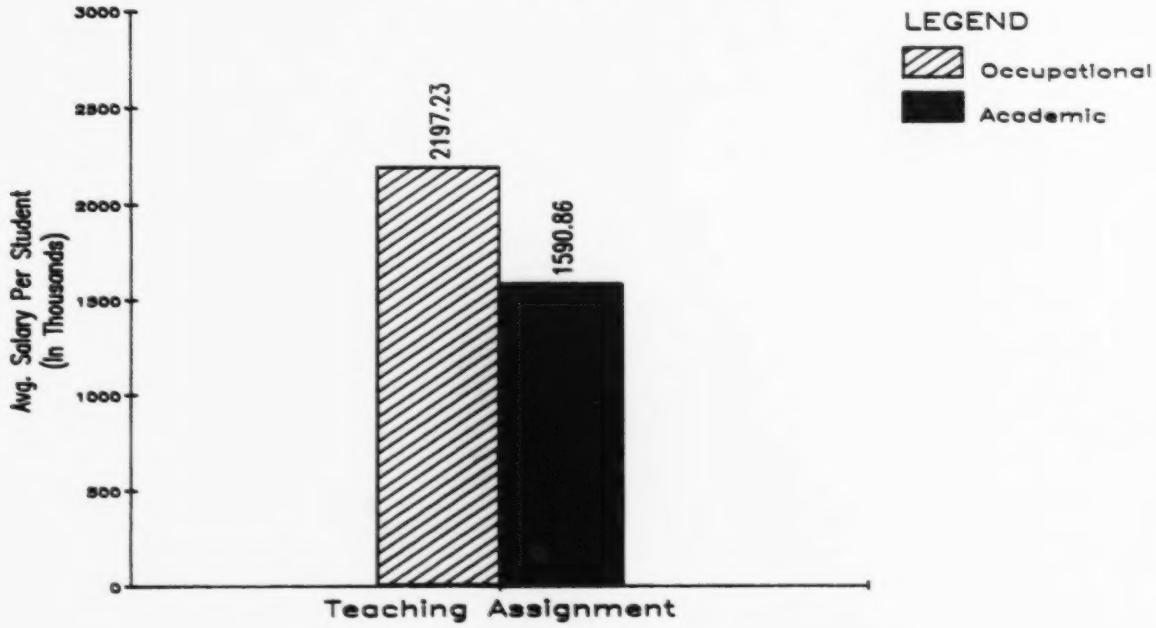
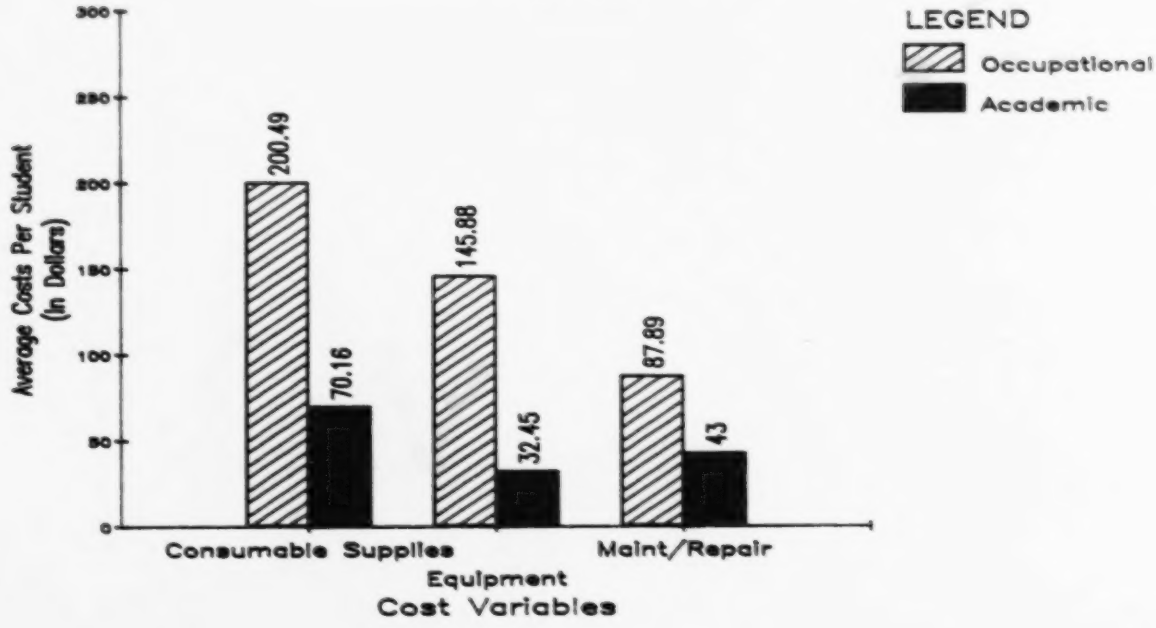



Figure 4.

Statewide Costs Per Student
Occupational Vs. Academic
1987



c. Average Teacher's Salary per Student of Occupational Education Compared with Academic Education Teacher's Salary per student (grades 9-12);

d. Comparative Average Salaries of Occupational Education Teachers with Academic Education Teachers (grades 9-12);

e. Comparative Expenditures on Consumable Supplies;

f. Comparative Expenditures on Equipment; and

g. Comparative Expenditures on Maintenance and Repair.

Supportive data on cost per student are illustrated in Appendices J-M. These data include:

a. Average Teacher's Salary Per Student

b. Cost of Consumable Supplies Per Student,

c. Cost of Equipment Per Student, and

d. Cost of Maintenance and Repair Per Student.

## Conclusions and Recommendations

The primary goal of this study was to use six variables to compare per-student costs between occupational education and academic education, grades 9-12. Based upon the findings, recommendations could be made to the Nevada legislature.

Although previous studies conducted in Nevada have identified the variables to be considered when analyzing cost differences for providing educational services for secondary education students, grades 9-12, between occupational education and academic education, there have been no previous examinations of dollar costs attributable to these variables on a statewide basis. The data included in this report, however,

clearly identifies that there are added costs to be considered when funding occupational education a per-student basis.

Data analyses revealed that it costs the state of Nevada more to provide educational services to the occupational education student than it does for the academic student, grades 9-12, on a cost-per-student basis.

With the information presented in this study, there is valid support for the development of a stable funding formula for providing additional funding for Nevada's occupational education programs, grades 9-12. The results indicate that a per-student-cost appropriation should consider an additional fifty-two percent when funding occupational education enrollments. Table 2 provides a summary of the following per-student costs:

a. average teacher's salary
b. consumable supplies
c. equipment
d. maintenance and repair
e. the difference in dollar cost between occupational education and academic education, and
f. the percent difference.

Table 2

Summary of Per Student Costs Differentials

| | Occupational | Academic |
|---|---|---|
| Average Teacher's Salary | $2,197.23 | $1,590.86 |
| Cost of Consumable Supplies | 200.49 | 70.16 |
| Cost of Equipment | 145.88 | 32.45 |
| Cost of Maintenance and Repair | 87.89 | 43.00 |
| TOTAL PER-STUDENT COST | $2,631.00 | $1,736.47 |
| DIFFERENCE IN DOLLARS | +895.02 | |
| PERCENTAGE DIFFERENCE | +52 percent | |

Currently, each Nevada school district is provided an average of $2,353 of the Distributive School Fund for each student enrolled in its district. Since the individual school district appropriations, using the Distributive School Fund, ranges from $2165 to $4209, Table 3 provides the basis for determining a recommended occupational education differential funding per student for each school district. Table 3 provides individual calculations, based upon a fifty-two (51.54) percent cost differential. It also includes recommended total district differential funding for its current numbers of occupational education students. Aggregated at the statewide level, these funds total $8,174,172.00.

It is recommended that this formula be validated over a biennium. If implemented, it is believed that this formula will put into place a significantly improved funding base for occupational education. An impact study should be conducted during the biennium following the funding to determine its effectiveness.

Table 3

Recommended Basic Support Funding for Nevada's Occupational Education Enrollments, Grades 9-12. (in whole dollars)

| School District | 1986-87 Basic Support Per Pupil | Trigger | Basic Support Guaranteed Per Pupil | Percent Additional Cost Per Pupil | Recommended Differential Funding Per Student | District Occupational Education Enrollment | Recommended Occup Educ Differential Funding Districtwide |
|---|---|---|---|---|---|---|---|
| Carson | $ 2,469 | 52 | $ 2,521 | 52 | $ 1,311 | 235 | $ 308,085.00 |
| Churchill | 2,647 | 54 | 2,701 | 52 | 1,405 | 186 | 261,330.00 |
| Clark | 2,230 | 49 | 2,279 | 52 | 1,185 | 3,821 | 4,527,885.00 |
| Douglas | 2,253 | 55 | 2,308 | 52 | 1,200 | 180 | 216,000.00 |
| Elko | 2,508 | 56 | 2,644 | 52 | 1,375 | 246 | 338,250.00 |
| Eureka | 4,209 | 82 | 4,301 | 52 | 2,237 | 18 | 40,266.00 |
| Humboldt | 2,642 | 59 | 2,701 | 52 | 1,405 | 132 | 185,460.00 |
| Lander | 2,811 | 59 | 2,870 | 52 | 1,492 | 55 | 82,060.00 |
| Lincoln | 4,035 | 77 | 4,112 | 52 | 2,138 | 110 | 235,180.00 |
| Lyon | 2,803 | 56 | 2,859 | 52 | 1,487 | 169 | 251,303.00 |
| Mineral | 2,945 | 62 | 3,007 | 52 | 1,564 | 53 | 82,892.00 |
| Nye | 2,571 | 58 | 2,629 | 52 | 1,367 | 150 | 205,050.00 |
| Pershing | 2,755 | 61 | 2,877 | 52 | 1,496 | 49 | 73,304.00 |
| Storey | 3,772 | 81 | 3,853 | 52 | 2,004 | 14 | 28,056.00 |
| Washoe | 2,165 | 49 | 2,214 | 52 | 1,151 | 1,071 | 1,232,721.00 |
| White Pine | 3,240 | 59 | 3,299 | 52 | 1,715 | 62 | 106,330.00 |
| TOTAL RECOMMENDED DIFFERENTIAL FUNDING FOR OCCUPATIONAL EDUCATION | | | | | | | $8,174,172.00 |

## REFERENCES

# REFERENCES

Reardon, Marcia R. (1984). [Added Cost Reimbursement for Vocational Education Programs in Comprehensive High Schools and Area Vocational Centers in Nevada--A Feasibility Study].

Stamps, Charles A. (1986). [Factors that Contribute to the Added Costs for Providing Educational Services to the Occupational Education Student]. Unpublished raw data.

# APPENDICES

Appendix A

Definitions to be Used When Completing the
Occupational Education/General Education
Cost-Comparison Survey

1- TOTAL OCCUPATIONAL EDUCATION STUDENTS - count all students, grades 9-12, who are enrolled in a job-specific occupational course or a course which is general, career, or exploratory. Count special education students who are enrolled in (mainstreamed) occupational education programs. Do not count special education students in self-contained classes or resource rooms. (Use your latest class count).

1-a TOTAL GENERAL EDUCATION STUDENTS - Count all students, grades 9-12, enrolled in all other programs. Count special education students enrolled in (mainstreamed) general edcuation programs. Do not count special education students in self-contained classes or resource rooms. (Use your latest class count).

2- TOTAL OCCUPATIONAL EDUCATION TEACHERS - Count all teachers who teach three (3) or more classes in any of the job-specific or general occupational program areas. Do not count special education teachers.

2-a TOTAL GENERAL EDUCATION TEACHERS - Count all teachers who teach three (3) or more classes in all other program areas. Do not count special education teachers.

3- TOTAL OCCUPATIONAL EDUCATION CLASSES - Count all job-specific or exploratory occupational classes. Do not count special education classes.

3-a TOTAL GENERAL EDUCATION CLASSES - Count all general education classes. Do not count special education classes.

4- TOTAL SALARIES FOR ALL OCCUPATIONAL EDUCATION TEACHERS - These data will be provided by the Personnel Services Division.

4-a TOTAL SALARIES FOR ALL GENERAL EDUCATION TEACHERS - These data will be provided by the Personnel Services Division.

5- CONSUMABLE SUPPLIES - OCCUPATIONAL EDUCATION - Using data from your school's 1986-87 budget allocation, calculate the cost of consumable supplies for occupational programs or classes. As a general rule, consumable supplies would include most items purchased under expense class 2910.

5-a CONSUMABLE SUPPLIES - GENERAL EDUCATION - Using data from your school's 1986-87 budget allocation, calculate the cost of consumable supplies for general education classes. As a general rule, consumable supplies would include most items purchased under expense class 2910.

6- EQUIPMENT - OCCUPATIONAL EDUCATION - Using data from your school's 1986-87 budget allocation, calculate the cost of equipment purchased for occupational education programs or classes.

6-a EQUIPMENT - GENERAL EDUCATION - Using data from your school's 1986-87 budget allocation, calculate the cost of equipment purchased for general education programs or classes.

7- EQUIPMENT MAINTENANCE/REPAIR - OCCUPATIONAL EDUCATION - These data will be provided by the Maintenance and Operations Department.

7-a EQUIPMENT MAINTENANCE/REPAIR - GENERAL EDUCATION - These data will be provided by the Maintenance and Operations Department.

8- FACILITIES - OCCUPATIONAL EDUCATION - Using calendar year 1986, prepare a list of facility modifications/rehabilitation, and new construction projects by job description for occupational programs or classes. For example, electrical work in room 207 for electronic typewriters. The Facilities Division will provide the cost of the project after you have returned the survey with your attached facility list to the Department of Occupational Education.

8-a FACILITIES - GENERAL EDUCATION - Using calendar year 1986, prepare a list of facility modifications/rehabilitation, and new construction projects by job description for general education programs or classes. For example, changing ceiling tile in a social studies' classroom or rehabilitation of a science lab facility. The Facilities Division will provide the cost of the project after you have returned the survey with your attached facility list to the Department of Occupational Education.

9- OTHER COST FACTORS - OCCUPATIONAL EDUCATION - Please list any other factor and its cost which would help establish the relative cost comparison for occupational education.

9-a OTHER COST FACTORS - GENERAL EDUCATION - Please list any other factor and its cost which would help establish the relative cost comparison for general education.

## Appendix B

### Suggested Procedures to be Used When Determining Occupational and Academic Education Unduplicated Enrollments Count on the Cost-Comparison Study

Method One:

We will use only four student's schedules in this example: (Part-time faculty could be figured, using this model)

Sally's Schedule

1st period Typing
2nd period English
3rd period Shorthand
4th period Math
5th period Science
6th period History
2 occup ed classes
4 academic classes
2/6 = .33 occ ed std
4/6 = .67 acad std

Joe's Schedule

1st period Typing
2nd period Auto Shop
3rd period Auto Shop
4th period Math
5th period History
6th period Band
3 occup ed classes
3 academic classes
3/6 = .50 occ ed std
3/6 = .50 acad std

Pete's Schedule

1st period Agri I
2nd period English
3rd period Math
4th period Ind Arts
5th period Typing
6th period Science
3 occ ed classes
3 acad classes
3/6 = .50 occ ed std
3/6 = .50 acad ed std

Sue's Schedule

1st period Science
2nd period Home Econ
3rd period English
4th period Math
5th period French
6th period Music
1 occ ed class
5 acad ed classes
1/6 = .17 occ ed std
5/6 = .83 acad std

To figure enrollment in each of the areas of study, add the individual percentages as derived above:

Occup ed enrollment

.33 (Sally)
.50 (Joe)
.50 (Pete)
.17 (Sue)
1.50 Total occ ed enrollment

Academic enrollment

.67 (Sally)
.50 (Joe)
.50 (Pete)
.83 (Sue)
2.50 Total Acad ed enrollment

Method Two

Collect class enrollment sheets for all classes taught in the school. Separate occupational education classes from the academic classes. Tally enrollments in each set. You will have duplicated total occupational education enrollments and duplicated total academic enrollments at the school. Add the individual school enrollments to arrive at the district-wide enrollments. Divide the individual totals by the number of class periods per day to get unduplicated count.

## Appendix C

Comparative Enrollments (Grades 9-12) in Occupational Education and Academic Education by School Districts, February 1987

| School District | Occupational | Academic |
|---|---|---|
| Carson City | 235 | 1,153 |
| Churchill | 186 | 685 |
| Clark | 3,821 | 23,033 |
| Douglas | 180 | 1,117 |
| Elko | 246 | 1,077 |
| Eureka | 18 | 71 |
| Humboldt | 132 | 436 |
| Lander | 55 | 212 |
| Lincoln | 110 | 289 |
| Lyon | 169 | 767 |
| Mineral | 53 | 263 |
| Nye | 150 | 640 |
| Pershing | 49 | 167 |
| Storey | 14 | 103 |
| Washoe | 1,071 | 9,800 |
| White Pine | 62 | 346 |
| TOTALS | 6,551 | 40,159 |
| AVERAGE DISTRICT ENROLLMENT | 409 | 2,510 |

Appendix D

Comparative Number of Occupational Education Teachers and Academic Education Teachers (Grades 9-12) by School District
February, 1987

| School District | Occupational | Academic |
|---|---|---|
| Carson City | 13 | 62 |
| Churchill | 12 | 31 |
| Clark | 199 | 968 |
| Douglas | 10 | 53 |
| Elko | 25 | 86 |
| Eureka | 3 | 6 |
| Humboldt | 11 | 28 |
| Lander | 6 | 13 |
| Lincoln | 11 | 20 |
| Lyon | 12 | 54 |
| Mineral | 5 | 17 |
| Nye | 16 | 36 |
| Pershing | 4 | 12 |
| Storey | 1.2 | 11 |
| Washoe | 57 | 418 |
| White Pine | 4 | 18 |
| TOTALS | 389.2 | 1,833 |
| STATEWIDE DISTRICT AVERAGE | 24 | 115 |

# Appendix E

Average Teacher's Salary per Student of Occupational Education
Compared with Academic Education (Grades 9 - 12)
February, 1987

| School District | OCCUPATIONAL Students | OCCUPATIONAL Total Teacher's Salary | OCCUPATIONAL Average Salary Per Student | ACADEMIC Students | ACADEMIC Total Teacher's Salary | ACADEMIC Average Salary Per Student |
|---|---|---|---|---|---|---|
| Carson City | 235 | $ 324,599.00 | $ 1,381.27 | 1,153 | $ 1,734,314.00 | $ 1,504.17 |
| Churchill | 186 | 346,141.00 | 2,228.06 | 685 | 719,255.00 | 1,557.19 |
| Clark | 3,821 | 6,019,672.00 | 1,575.41 | 23,033 | 28,292,100.00 | 1,228.32 |
| Douglas | 180 | 271,330.00 | 1,507.38 | 1,117 | 1,695,344.00 | 1,517.76 |
| Elko | 246 | 690,900.00 | 2,809.34 | 1,077 | 1,861,475.00 | 1,728.39 |
| Eureka | 18 | 58,150.00 | 3,230.55 | 71 | 140,996.00 | 1,985.85 |
| Humboldt | 112 | 283,133.00 | 2,144.94 | 374 | 687,854.00 | 1,577.64 |
| Lander | 55 | 140,085.00 | 2,547.00 | 212 | 376,960.00 | 1,778.11 |
| Lincoln | 110 | 104,731.00 | 2,199.03 | 289 | 243,242.00 | 1,703.19 |
| Lyon | 169 | 364,677.00 | 2,157.85 | 767 | 1,247,303.00 | 1,626.20 |
| Mineral | 53 | 125,803.00 | 2,373.64 | 263 | 367,575.00 | 1,397.62 |
| Nye | 150 | 166,571.00 | 2,689.22 | 640 | 576,555.00 | 1,331.37 |
| Pershing | 49 | 114,035.00 | 2,327.24 | 167 | 334,464.00 | 2,002.77 |
| Storey | 14 | 36,000.00 | 2,714.28 | 103 | 210,000.00 | 2,038.83 |
| Washoe | 1,071 | 1,580,675.00 | 1,475.00 | 9,800 | 11,458,345.00 | 1,169.32 |
| White Pine | 62 | 111,261.00 | 1,794.53 | 346 | 452,257.00 | 1,307.10 |
| TOTALS | 6,531 | 10,739,763.00 | 35,155.62 | 40,097 | 50,399,039.00 | 25,453.83 |
| STATEWIDE AVERAGE TEACHER'S SALARY PER STUDENT | | | 2,197.23 | | | 1,590.86 |

# Appendix F

Comparative Average Salaries of Occupational Education Teachers
with Academic Education Teachers (grades 9-12)
by School Districts, February, 1987

| School District | OCCUPATIONAL Tchrs | Total Salary | Average Salary | ACADEMIC Tchrs | Total Salary | Average Salary |
|---|---|---|---|---|---|---|
| Carson City | 13 | $ 324,599.00 | $24,969.00 | 62 | $1,734,314.00 | $27,973.00 |
| Churchill | 10 | 346,141.00 | 34,547.33 | 22 | 719,255.00 | 23,201.77 |
| Clark | 199 | 6,019,672.00 | 30,249.60 | 968 | 28,292,100.00 | 29,227.37 |
| Douglas | 180 | 271,330.00 | 27,133.00 | 53 | 1,695,344.00 | 31,988.00 |
| Elko | 25 | 690,900.00 | 27,636.00 | 86 | 1,861,475.00 | 21,645.00 |
| Eureka | 3 | 58,150.00 | 19,383.00 | 6 | 140,996.00 | 23,499.00 |
| Humboldt | 11 | 283,133.00 | 25,739.36 | 28 | 687,854.00 | 24,566.21 |
| Lander | 6 | 140,085.00 | 23,348.00 | 13 | 376,960.00 | 28,997.00 |
| Lincoln | 5 | 104,731.00 | 21,990.00 | 9 | 243,242.00 | 24,811.00 |
| Lyon | 12 | 364,677.00 | 30,390.00 | 54 | 1,247,303.00 | 23,098.00 |
| Mineral | 5 | 125,803.00 | 25,161.00 | 17 | 367,575.00 | 21,622.00 |
| Nye | 5 | 166,571.00 | 25,211.50 | 14 | 576,555.00 | 23,668.91 |
| Pershing | 4 | 114,035.00 | 28,508.75 | 12 | 334,464.00 | 27,872.00 |
| Storey | 1.2 | 38,000.00 | 31,666.66 | 11 | 210,000.00 | 19,090.00 |
| Washoe | 57 | 1,580,675.00 | 27,731.00 | 418 | 11,459,345.00 | 27,415.00 |
| White Pine | 4 | 111,261.00 | 27,815.25 | 18 | 452,257.00 | 25,125.38 |
| TOTALS | 540.2 | 10,739,763.00 | 431,479.45 | 1,791 | 50,399,039.00 | 403,599.64 |
| STATEWIDE AVERAGE SALARY | | | 26,967.47 | | | 25,224.98 |

## Appendix G

Comparative Expenditures on Consumable Supplies by School District

| School District | Occupational | Academic |
|---|---|---|
| Carson City | $ 32,622.00 | $ 50,153.00 |
| Churchill | 22,712.00 | 43,453.00 |
| Clark | 452,522.00 | 527,329.00 |
| Douglas | 23,000.00 | 24,000.00 |
| Elko | 47,405.00 | 61,566.00 |
| Eureka | 7,520.00 | 9,031.00 |
| Humboldt | 24,287.00 | 25,000.00 |
| Lander | 6,001.00 | 14,311.00 |
| Lincoln | 19,643.00 | 34,947.00 |
| Lyon | 40,150.00 | 38,250.00 |
| Mineral | 9,059.00 | 21,230.00 |
| Nye | 9,887.00 | 41,990.00 |
| Pershing | 20,100.00 | 29,000.00 |
| Storey | 8,000.00 | 16,000.00 |
| Washoe | 96,945.00 | 344,084.00 |
| White Pine | 16,900.00 | 18,000.00 |
| TOTALS | $836,753.00 | $1,298,344.00 |
| AVERAGE STATEWIDE COMPARATIVE COSTS OF CONSUMABLE SUPPLIES | 52,291.06 | 81,146.50 |

## Appendix H

### Comparative Expenditures of Equipment by School District

| School District | Occupational | Academic |
|---|---|---|
| Carson City | $ 17,385.00 | $ 15,599.00 |
| Churchill | 4,038.00 | 25,044.00 |
| Clark | 89,158.00 | 187,000.00 |
| Douglas | 4,000.00 | 8,300.00 |
| Elko | 4,725.00 | 25,500.00 |
| Eureka | 15,032.42 | 6,008.00 |
| Humboldt | 13,805.00 | 15,000.00 |
| Lander | 1,684.00 | 3,315.00 |
| Lincoln | 40,754.00 | 9,221.00 |
| Lyon | 8,935.00 | 11,800.00 |
| Mineral | 7,750.00 | 2,475.00 |
| Nye | 24,445.00 | 16,088.00 |
| Pershing | 5,000.00 | 12,000.00 |
| Storey | 5,000.00 | 10,000.00 |
| Washoe | 12,520.00 | 323,793.00 |
| White Pine | 0.00 | 4,000.00 |
| TOTALS | $254,231.42 | $675,143.00 |
| AVERAGE STATEWIDE COMPARATIVE COSTS OF EQUIPMENT | 15,889.46 | 42,196.44 |

## Appendix I

### Comparative Expenditures on Maintenance and Repair by School District

| School District | Occupational | Academic |
|---|---|---|
| Carson City | $ 27,501.00 | $ 13,975.00 |
| Churchill | 5,625.00 | 11,375.00 |
| Clark* | 257,638.00 | 790,645.00 |
| Douglas | 10,000.00 | 9,000.00 |
| Elko | 12,924.00 | 2,794.00 |
| Eureka | 1,003.00 | 1,230.00 |
| Humboldt | 9,786.00 | 2,500.00 |
| Lander | 3,500.00 | 2,434.00 |
| Lincoln | 5,217.00 | 2,910.00 |
| Lyon | 15,400.00 | 18,600.00 |
| Mineral | NA | NA |
| Nye** | 62,340.00 | 257,503.00 |
| Pershing | 1,500.00 | 5,500.00 |
| Storey | 1,700.00 | 1,000.00 |
| Washoe | NA | NA |
| White Pine | 500.00 | 5,000.00 |
| TOTALS | $414,634.00 | $1,124,466.00 |
| AVERAGE STATEWIDE COMPARATIVE COSTS OF MAINTENANCE AND REPAIR | 29,616.71 | 80,319.00 |

*Clark County School District did extensive removal of asbestos and retrofitting for specific schools

**Nye School District built new facilities and/or did extensive maintenance and repair for the 1986-87 school year.

## Appendix J

### Average Teacher's Salary Per Student

| School District | Occupational | Academic |
|---|---|---|
| Carson City | $ 1,381.27 | $ 1,504.17 |
| Churchill | 2,228.86 | 1,557.19 |
| Clark | 1,575.41 | 1,228.32 |
| Douglas | 1,507.38 | 1,517.76 |
| Elko | 2,808.54 | 1,728.39 |
| Eureka | 3,230.55 | 1,985.85 |
| Humboldt | 2,144.94 | 1,577.64 |
| Lander | 2,547.00 | 1,778.11 |
| Lincoln | 2,199.03 | 1,703.19 |
| Lyon | 2,157.85 | 1,626.20 |
| Mineral | 2,373.64 | 1,397.62 |
| Nye | 2,689.22 | 1,331.37 |
| Pershing | 2,327.24 | 2,002.77 |
| Storey | 2,714.28 | 2,038.83 |
| Washoe | 1,475.88 | 1,169.32 |
| White Pine | 1,794.53 | 1,307.10 |
| TOTALS | $35,155.62 | $25,453.83 |
| STATEWIDE AVERAGE OF TCH'S SALARY PER STUDENT | 2,197.23 | 1,590.86 |

## Appendix K

### Cost of Consumable Supplies Per Student

| School District | Occupational | Academic |
|---|---|---|
| Carson City | $ 138.81 | $ 43.49 |
| Churchill | 122.10 | 63.43 |
| Clark | 118.43 | 22.89 |
| Douglas | 127.77 | 21.48 |
| Elko | 192.70 | 57.16 |
| Eureka | 417.77 | 127.19 |
| Humboldt | 184.00 | 57.33 |
| Lander | 109.10 | 67.50 |
| Lincoln | 178.57 | 120.92 |
| Lyon | 237.57 | 49.86 |
| Mineral | 170.92 | 80.72 |
| Nye | 65.91 | 65.60 |
| Pershing | 410.20 | 173.65 |
| Storey | 571.42 | 155.33 |
| Washoe | 90.51 | 34.09 |
| White Pine | 272.58 | 52.02 |
| TOTALS | $3,408.36 | $1,192.66 |
| AVERAGE STATEWIDE COST OF CONSUMABLE SUPPLIES PER STUDENT | 200.49 | 70.16 |

## Appendix L

### Cost of Equipment Per Student

| School District | Occupational | Academic |
|---|---|---|
| Carson City | $ 73.97 | $ 13.49 |
| Churchill | 21.70 | 36.56 |
| Clark | 23.33 | 8.11 |
| Douglas | 22.22 | 7.43 |
| Elko | 19.20 | 23.67 |
| Eureka | 835.13 | 84.61 |
| Humboldt | 104.58 | 34.40 |
| Lander | 30.61 | 15.63 |
| Lincoln | 370.49 | 31.90 |
| Lyon | 52.86 | 15.38 |
| Mineral | 146.22 | 9.41 |
| Nye | 162.96 | 25.13 |
| Pershing | 102.04 | 71.85 |
| Storey | 357.14 | 97.08 |
| Washoe | 11.69 | 33.04 |
| White Pine | 0.00 | 11.56 |
| TOTALS | $2,334.14 | $519.25 |
| AVERAGE STATEWIDE COST OF EQUIPMENT PER STUDENT | 145.88 | 32.45 |

## Appendix M

### Cost of Maintenance and Repair Per Student

| School District | Occupational | Academic |
|---|---|---|
| Carson City | $ 117.02 | $ 12.12 |
| Churchill | 30.24 | 16.60 |
| Clark | 67.42 | 34.32 |
| Douglas | 55.55 | 8.05 |
| Elko | 52.53 | 2.59 |
| Eureka | 55.72 | 17.32 |
| Humboldt | 74.13 | 5.73 |
| Lander | 63.63 | 11.48 |
| Lincoln | 47.42 | 10.06 |
| Lyon | 91.12 | 24.25 |
| Mineral | NA | NA |
| Nye* | 415.60 | 402.34 |
| Pershing | 30.61 | 32.93 |
| Storey | 121.42 | 9.70 |
| Washoe | NA | NA |
| White Pine | 8.06 | 14.45 |
| TOTALS | $1,230.47 | $601.94 |
| AVERAGE STATEWIDE COST OF MAINTENANCE AND REPAIR PER STUDENT | 87.89 | 43.00 |

*Nye School District built new facilities and/or did major maintenance and repair for the 1986-87 school year.